

## ABSTRACT

A low thermal impedance optoelectronic device includes an optical cavity adjacent a low thermal impedance DBR that provides improved heat dissipation and temperature performance.

- 5 The thermal impedance of the DBR may be reduced by increasing the relative or absolute thickness of a layer of high thermal conductivity material relative to a layer of low thermal conductivity material for at least a portion of the mirror periods. The thermal impedance may also be reduced by
- 10 increasing the distance between phonon scattering surfaces by increasing the thickness of the high thermal conductivity layer, the low thermal conductivity layer or both.

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